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L10	L9 and noise$	17	L10
L9	L1 and (differential adj2 transmission)	37	L9
L8	L3 and ((rear or front) adj2 module$)	0	L8
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L6	L3 and (magnetic$)	12	L6
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L2	L1 and (nic).ab.	38	L2
L1	709/$.ccls. or 714/$.ccls.	40355	L1

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US006675205B2

(12) **United States Patent**
Meadway et al.
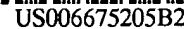
(10) Patent No.: **US 6,675,205 B2**
(45) Date of Patent: **Jan. 6, 2004**

(54) **PEER-TO-PEER AUTOMATED ANONYMOUS ASYNCHRONOUS FILE SHARING**

(75) Inventors: **Michael D. Meadway**, Snohomish, WA (US); **Gary W. Tripp**, Bainbridge Island, WA (US)

(73) Assignee: **Arcessa, Inc.**, Kirkland, WA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/910,460**

(22) Filed: **Jul. 20, 2001**

(65) **Prior Publication Data**

US 2002/0073137 A1 Jun. 13, 2002

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/419,405, filed on Oct. 14, 1999, now Pat. No. 6,516,337, and a continuation-in-part of application No. 09/575,971, filed on May 23, 2000.
(60) Provisional application No. 60/219,983, filed on Jul. 21, 2000.

(51) Int. Cl.⁷ G06F 13/00
(52) U.S. Cl. 709/219; 709/203; 709/329; 707/10
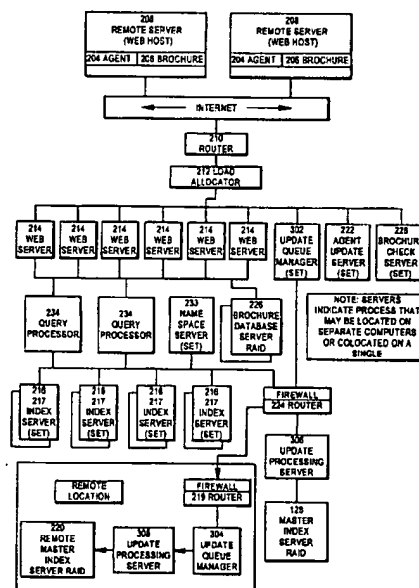(58) Field of Search 709/201, 202, 709/203, 217, 219, 313, 329; 707/10, 100, 104

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Primary Examiner—Viet D. Vu
(74) *Attorney, Agent, or Firm*—Black Lowe & Graham, PLLC

(57) **ABSTRACT**

A service on a computer network which performs centralized searches based on index information transmitted by peer systems to a central site using an agent program running on each peer and then directs the peer systems to each other for the purpose of retrieving files. If none of the peer systems known to contain the file is online (and the file is therefore not available), the request is placed in a queue of file requests maintained by the central site. When a system containing the requested file connects to the service, the requested file is retrieved from that system and then distributed to the other systems which had requested the file. Files retrieved for systems not currently online are held in a queue until the user connects or are emailed to the user, usually as an email attachment. Or, when a computer system containing the file connects to the central site, the file is sent by the system containing the file either to the central site or directly to the user who requested the file via email attachment.

9 Claims, 34 Drawing Sheets

US005822524A

United States Patent [19]

Chen et al.

[11] Patent Number: 5,822,524

[45] Date of Patent: Oct. 13, 1998

[54] **SYSTEM FOR JUST-IN-TIME RETRIEVAL OF MULTIMEDIA FILES OVER COMPUTER NETWORKS BY TRANSMITTING DATA PACKETS AT TRANSMISSION RATE DETERMINED BY FRAME SIZE**

[75] Inventors: **Huey-Shiang Chen; Mon-Song Chen**, both of Katonah, N.Y.; **Shiow-Laang Huang**, Herndon, Va.; **Deyang Song**, Oradell, N.J.

[73] Assignee: **Infovalue Computing, Inc.**, Elmsford, N.Y.

[21] Appl. No.: **505,488**

[22] Filed: **Jul. 21, 1995**

[51] Int. Cl.^{6} G06F 13/00
[52] U.S. Cl. 395/200.33
[58] Field of Search 395/600, 200.33, 395/200.47, 200.49, 200.61, 200.76; 358/468; 370/60.1, 84, 94, 60; 364/200; 360/73; 235/375; 381/41; 375/13, 357; 348/7, 10, 12, 13, 14

[56] **References Cited**

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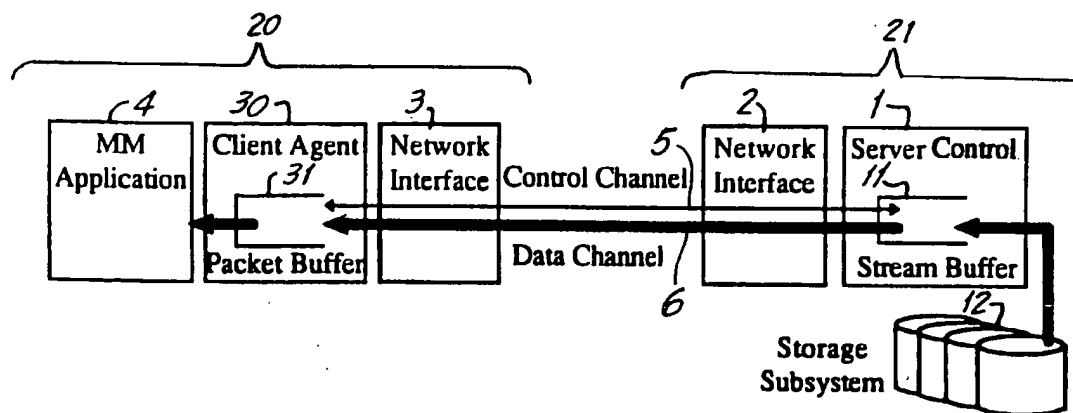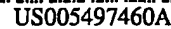|			
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06-014080	1/1994	Japan	H04L 29/06

Primary Examiner—Moustafa M. Meky
Attorney, Agent, or Firm—Eliot S. Gerber

[57] **ABSTRACT**

A method in computer networks in which a client machine (playback client computer) requests multimedia files, such as compressed video clips, from a server (storage server computer). The transmission uses digital data packets. In the case of video files, the packet headers identify the video frame and the sequence number of each packet derived from the frame. The transmission timing is not based on a steady byte stream or an average of bytes to be transmitted. Instead, in the case of video, the frame rate determines normal transmission and a frame is transmitted during each frame time. The client agent has a normal packet buffer, normally holding 1–5 video frames. The transmission rate is adjusted to keep that buffer filled within its normal range. The timing information required for transmission, in one embodiment, is stored in a separate index file associated with each multimedia file.

42 Claims, 6 Drawing Sheets

[54] **SYSTEM AND METHOD FOR DETERMINING NETWORK CONNECTIVITY**

[75] Inventors: **Warren D. Bailey**, Pittsboro; **Erik L. Dixon**, Durham; **Michele M. Ferris**, Cary; **Henry M. Garrett**, Raleigh; **Gregory F. Paussa**, Cary; **Anthony D. Walker**, Durham, all of N.C.

[73] Assignee: **International Business Machines Corporation**, Armonk, N.Y.

[21] Appl. No.: **262,197**

[22] Filed: **Jun. 20, 1994**

[51] Int. Cl.⁶ **G06F 11/34**

[51] Int. Cl.^{6} **G06F 11/34**

[52] U.S. Cl. **395/183.15; 370/85.4**

[58] Field of Search 395/575, 500, 395/725, 182.02, 183.15, 183.19; 370/85.4, 85.7, 85.14, 85.15

[56] **References Cited**

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Primary Examiner—Robert W. Beausoliel, Jr.
Assistant Examiner—Albert Decady
Attorney, Agent, or Firm—Stephen T. Keohane

[57] **ABSTRACT**

A system (such as a multiprotocol LAN adapter) for use in a workstation or other processing machine automatically determines the type of network to which the workstation is connected and for automatically determines the type of physical medium to which the workstation is attached. The system has a plurality of different physical ports for supporting various available physical media over which network data may be transmitted. For example, the system may have a port for connecting to shielded twisted pair (STP) wiring, a port for connecting to unshielded twisted pair (UTP) wiring, a port for connecting to coaxial cable, and a port for supporting the Attachment Unit Interface (AUI). Connected to each of these physical ports are various network interface devices for supporting the various available networking protocols, e.g., token ring, Ethernet, etc. Logic circuitry and control software are connected to the network interface devices. In order to determine the valid network connections to the individual ports, a short interrogation frame is successively transmitted by each of the network interface devices to each of the ports. Depending upon the status of each transmission, the system determines what type of network (if any) is connected to and by which type of physical medium. Based upon these two determinations, the workstation can be automatically configured without user intervention.

21 Claims, 5 Drawing Sheets
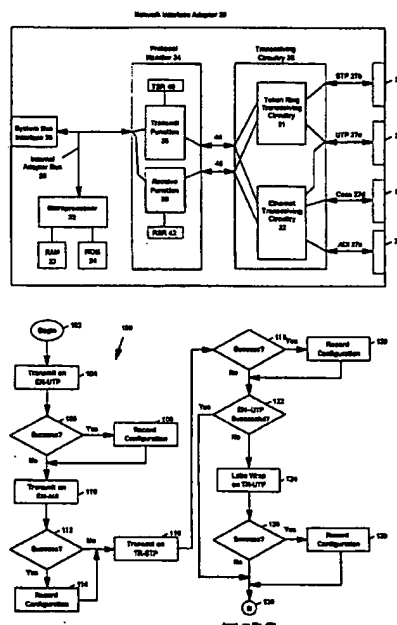
(12) **United States Patent**
Haq

(10) Patent No.: **US 6,430,606 B1**
(45) Date of Patent: **Aug. 6, 2002**

(54) **HIGH SPEED SIGNALING FOR INTERFACING VLSI CMOS CIRCUITS**

(75) Inventor: **Ejaz Ul Haq**, Sunnyvale, CA (US)

(73) Assignee: **Jazio, Inc.**, San Jose, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/318,690**

(22) Filed: **May 25, 1999**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/165,705, filed on Oct. 2, 1998, now Pat. No. 6,151,648, and a continuation-in-part of application No. 09/057,158, filed on Apr. 7, 1998, now Pat. No. 6,160,423.
(60) Provisional application No. 60/078,213, filed on Mar. 16, 1998.

(51) Int. Cl.[7] G06F 13/00
(52) U.S. Cl. 709/208; 710/45
(58) Field of Search 709/200, 201, 709/208; 710/20, 25, 45, 58, 60

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Primary Examiner—Moustafa M. Meky
(74) *Attorney, Agent, or Firm*—Squire, Sanders & Dempsey, L.L.P.

(57) **ABSTRACT**

A system of the present invention uses small swing differential source synchronous voltage and timing reference (SSVTR and /SSVTR) signals to compare single-ended signals of the same slew rate generated at the same time from the same integrated circuit for high frequency signaling. The SSVTR and /SSVTR signals toggle every time the valid signals are driven by the transmitting integrated circuit. Each signal receiver includes two comparators, one for comparing the signal against SSVTR and the other for comparing the signal against /SSVTR. A present signal binary value determines which comparator is coupled to the receiver output, optionally by using XOR logic with SSVTR and /SSVTR. The coupled comparator in the receiver detects whether change in signal binary value occurred or not until SSVTR and /SSVTR have changed their binary value. The same comparator is coupled if the signal transitions. The comparator is decoupled if no transition occurs. When the flight time between a master device and a slave device is greater than the cycle time of the system clock, the system uses multiple clocks. One clock controls transmitting signals from the slave devices to the master device, and another clock controls initiating each slave device to communicate signals to the master device. A first clock may be looped back to the slave devices to communicate signals such as requests from the master device to the slave device.

23 Claims, 37 Drawing Sheets
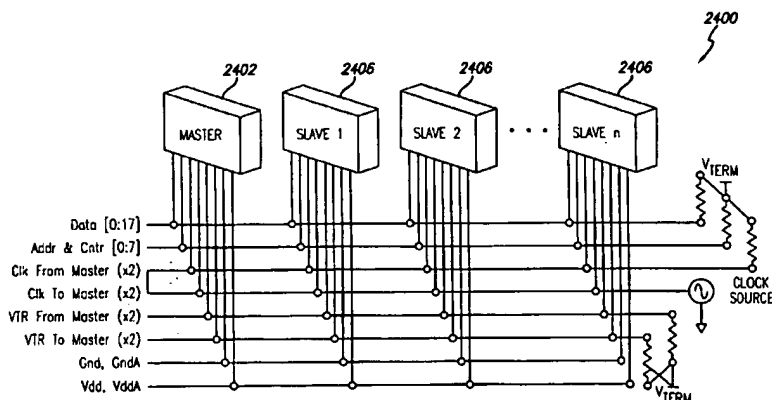
United States Patent [19]

Geiszler et al.

[11] **Patent Number:** **6,157,952**

[45] **Date of Patent:** **Dec. 5, 2000**

[54] **METHOD AND APPARATUS FOR NETWORKED ACCESS CONTROL**

[75] Inventors: **Kenneth J. Geiszler**, Campbell; **Mark W. Lee; Robert D. Kohler**, both of San Jose, all of Calif.

[73] Assignee: **Keri Systems, Inc.**, San Jose, Calif.

[21] Appl. No.: **08/914,945**

[22] Filed: **Aug. 20, 1997**

[51] **Int. Cl.**[7] **G06F 1/26**

[52] **U.S. Cl.** **709/224**; 709/223; 709/224; 709/228; 709/217; 709/220; 709/222; 709/240; 395/750; 326/30; 340/825.31; 340/825.34; 713/300; 700/276

[58] **Field of Search** 709/222, 228, 709/200, 220, 224, 223, 217; 713/200, 202, 103, 300, 301; 340/825.31, 825.34; 700/276; 395/750; 326/30

[56] **References Cited**

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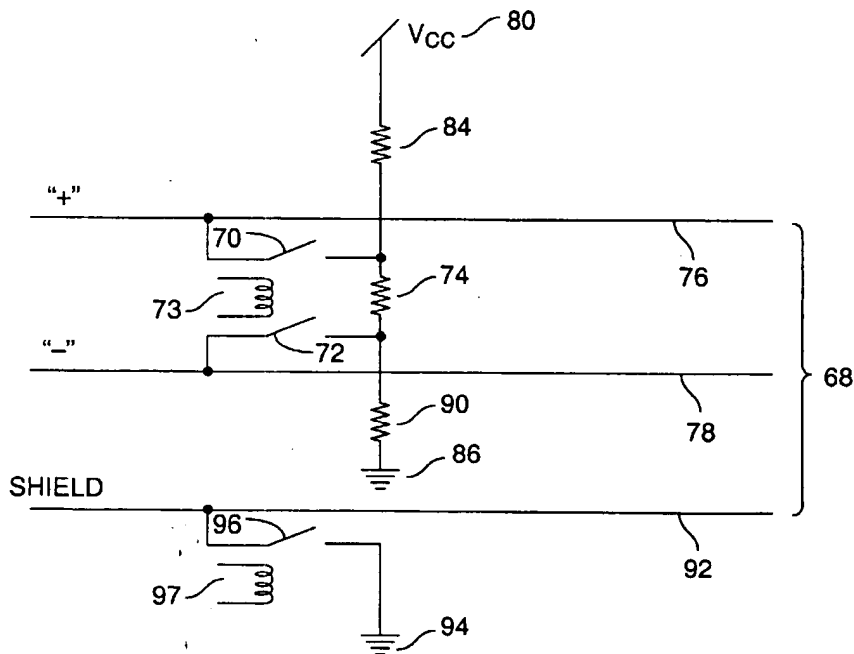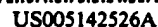|			
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Primary Examiner—Dung C. Dinh
Assistant Examiner—Hieu C. Le
Attorney, Agent, or Firm—D'Alessandro & Ritchie

[57] **ABSTRACT**

An access control device controller and method of operation are provided which provide in a first aspect of the invention, a novel way in which to set controller network addresses providing a visually perceivable digital readout to assist installers in setting the correct address, in a second aspect of the invention, automatic configuration of end of line termination resistors, line biasing resistors and earth ground connection to the network medium shield, in a third aspect of the invention, automatic configuration of a controller/host computer data communications link, in a fourth aspect of the invention, a novel method and apparatus for monitoring ambient RF noise levels, and in a fifth aspect of the invention, a novel method of detecting environmental conditions likely to lead to a system failure.

10 Claims, 5 Drawing Sheets

United States Patent [19]

Moriue et al.

[11] Patent Number: 5,142,526

[45] Date of Patent: Aug. 25, 1992

[54] TRANSMISSION FAILURE DIAGNOSIS APPARATUS

[75] Inventors: Hiroo Moriue, Hiratsuka; Yusaku Himono, Tokyo; Osamu Michihira; Toshimichi Tokunaga, both of Hiroshima, all of Japan

[73] Assignees: Furukawa Electric Co., Ltd.; Mazda Corp., both of Tokyo, Japan

[21] Appl. No.: 480,715

[22] Filed: Feb. 15, 1990

[30] Foreign Application Priority Data

Feb. 15, 1989 [JP] Japan 1-33790

[51] Int. Cl.⁵ H04J 3/14; H04B 17/00
[52] U.S. Cl. 370/14; 370/13; 375/10; 371/15.1
[58] Field of Search 370/13, 14, 17, 94.1, 370/15, 85.1, 85.9, 24, 27, 29; 371/64, 15.1, 20.1, 29.1; 455/69; 375/10

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Primary Examiner—Stephen Chin
Assistant Examiner—Alpus H. Hsu
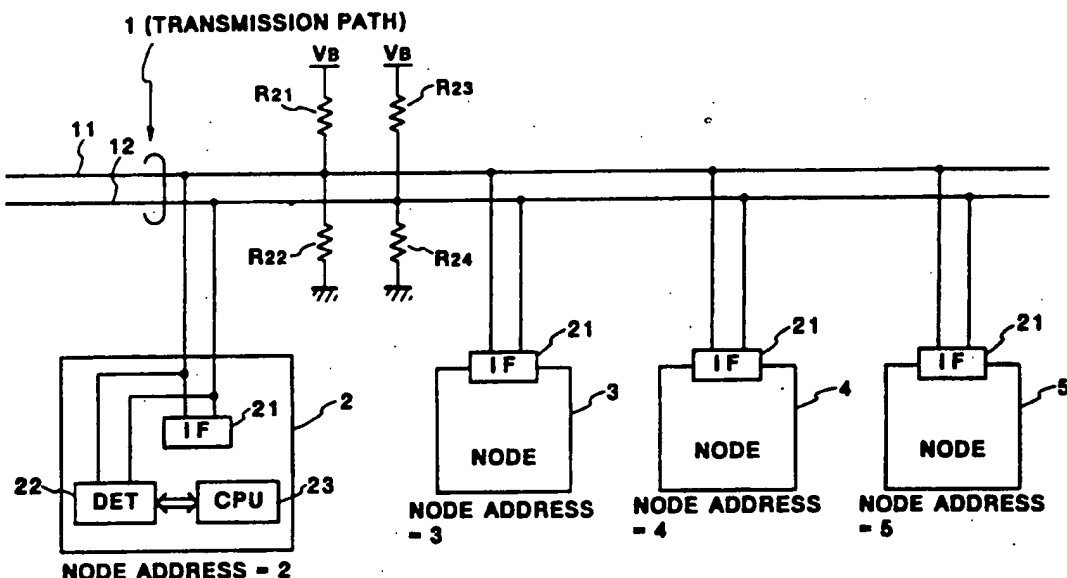Attorney, Agent, or Firm—Staas & Halsey

[57] ABSTRACT

A transmission failure diagnosis apparatus for use in a multiplex transmission system which sends and receives data by time division communication among a plurality of nodes connected by a common transmission path. This transmission failure diagnosis apparatus comprises a reception circuit, connected in the transmission path, for receiving a transmission signal on the transmission path, an amplitude detection circuit for detecting the signal amplitude of a transmission signal received by this reception circuit, and a judgment circuit for judging failures in the system on the basis of the amplitude of the transmission signal detected by the amplitude detection circuit.

12 Claims, 6 Drawing Sheets

United States Patent [19]

Davis et al.

[11] **4,075,691**

[45] **Feb. 21, 1978**

[54] **COMMUNICATION CONTROL UNIT**

[75] Inventors: John Stephen Davis, Glendale; Kenneth Norman Larson, Thousand Oaks; Frank William Phalen, Canoga Park, all of Calif.

[73] Assignee: Bunker Ramo Corporation, Oak Brook, Ill.

[21] Appl. No.: 629,510

[22] Filed: Nov. 6, 1975

[51] Int. Cl.² G06F 3/04; G06F 5/04
[52] U.S. Cl. 364/200
[58] Field of Search .... 340/172.5; 445/1; 364/200 MS, 900 MS

[56] **References Cited**

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Primary Examiner—Mark E. Nusbaum
Attorney, Agent, or Firm—F. M. Arbuckle; A. Freilich

[57] **ABSTRACT**

A communication control unit useful for operably coupling a plurality of peripheral devices to a data processing system including a central processing unit (CPU) and a main system memory. The communication control unit is comprised of three major sections: (1) A direct memory access module (DMA) for communicating with the memory of the CPU; (2) A serial interface adaptor module (SIA) for converting parallel data to serial data for transmission to a peripheral device and serial data to parallel data on receiving from a peripheral device; and (3) A programmable controller module (PCM) connected between the DMA and SIA for providing the overall control of message reception and transmission. The PCM comprises a small special-purpose programmable parallel computer. A program (firmware) stored in a read-only memory of the PCM enables the PCM to handle the different communication disciplines observed by various peripheral devices operable with the communication control unit. The program may be considered as containing two levels of instructions. The first level consists of a control program containing common routines and control programs that are used by the various communication disciplines. The second level of firmware contains all communication discipline dependent instructions associated with the processing of transmit or receive characters according to the particular discipline. Just as the first level programs are used by all the communication disciplines, the application dependent programs in the second level are used by all channels on the PCM I/O bus that communicate according to the discipline represented by the instructions of these programs.

5 Claims, 6 Drawing Figures